

### **REMARKS**

Claims 1-17 are now pending in the application. Claims 1, 8, 11, and 15-17 are currently amended. No claims are newly added or cancelled. Support for the foregoing amendment can be found throughout the specification, drawings, and claims as originally filed. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

### **SUMMARY OF INTERVIEW**

Applicant would first like to thank the Examiner for the courtesies extended to Applicant's representatives during the telephone interview held on March 5, 2009.

During that interview, Applicant's representatives and the Examiner discussed the rejections under 35 U.S.C. §§ 102 & 112, the cited art, and the proposed claim amendments. No agreement was reached.

### **REJECTION UNDER 35 U.S.C. § 112**

Claims 1, 11 and 15-17 stands rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

Claims 1, 11, and 15-17 stand rejected under 35 U.S.C. § 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claim 1 stands rejected under 35 U.S.C. § 112, second paragraph, for providing insufficient antecedent basis for this limitation in the claim.

Claim 8 stands rejected under 35 U.S.C. § 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claim 17 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

These rejections are respectfully traversed.

Applicant has amended the claims 1, 11, 15-17 to address that Examiner's rejections.

With respect to claim 8, Applicant has amended claim 8 to replace the phrase "thinning the parameters" with the phrase "reducing the number of the parameters." Support for this amendment at least can be found in [0162] of the specification as published, stating "coefficients extracted with intervals of several points are registered for both an angular direction and radial direction. Where coefficients are registered at every other point for both an angular direction and a radial direction[.]" (Emphasis added.) Further, the specification also indicates that "[t]he coefficients of the relational expression calculated as described above are stored in the iris database 12 as parameters" at [0158]. Specifically, in this embodiment, coefficients for expressing the relational expression between the feature data and the pupil opening degree index correspond to parameters (see [0144]).

Applicant has also amended claim 17 in accordance with the Examiner's suggestion with respect to the term "memory."

In view of the foregoing, Applicant respectfully requests reconsideration and withdrawal of the rejections.

### **REJECTION UNDER 35 U.S.C. § 103**

Claims 1-5, 7-8, and 15-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Oda in view of Well Known Art. This rejection is respectfully traversed.

Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Oda in view of Smith (U.S. Pub. No. 2002/0016839; "Smith") in further view of Bowers (U.S. Pat. No. 5,546,529; "Bowers"). This rejection is respectfully traversed.

Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Flom (U.S. Pat. No. 4,641,349; "Flom"). This rejection is respectfully traversed.

Claims 9 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nishida (U.S. Pat. No. 6,424,746; "Nishida"). This rejection is respectfully traversed.

Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Suzuki (U.S. Pat. No. 6,614,919; "Suzaki"). This rejection is respectfully traversed.

Claim 1 recites the following:

capturing ... a plurality of iris images from a registrant;  
obtaining feature data and a pupil opening degree index from each of the plurality of iris images and associating that obtained pupil opening degree index with those obtained feature data;  
using the pupil opening degree indices to index the obtained feature data of the registrant; and  
... storing the obtained feature data, the pupil opening degree indices, and index relationship between the obtained feature data and the pupil opening degree indices, of the registrant, in an iris database device[.]

In other words, claim 1 requires capturing multiple iris images from a registrant, indexing feature data from each of the multiple iris images with a pupil opening degree index of that iris image, and storing the indexed feature data in an iris database. The Examiner asserts that Oda teaches the above features. Applicant respectfully disagrees.

The specific portions of Oda cited by the Examiner (i.e., column 4, 11-13; column 3, lines 54-62; and column 9, lines 23-28) for rejecting claim 1 at best appear directed to an authentication process. The authentication process initially determines whether or not the image of the eye is for a currently living thing. For that determination, Oda appears to show techniques of intentionally causing biogenic reactions in the eye of the subject (e.g., changing lighting of the environment to cause contractions of pupil diameter).

Specifically, the system of Oda at best shows acquiring multiple images in the authentication process, rather than in the registration process. The acquired multiple images are used to determine if the expected biogenic responses exist during the authentication process. If the expected biogenic responses exist, then the image data is compared with an iris code stored in the database (column 11, line 67, to column 12, line 1). Applicant can find no mention of storing multiple iris codes for a single registrant in a database. Another portion of Oda cited by the Examiner (column 4, lines 14-24) also has no relevance toward storing multiple images for one registrant; the passage at best shows that biogenic characteristics can be used to determine authenticity of an eye.

Therefore, Applicant submits that Oda fails to teach or suggest storing multiple iris images for a registrant in an iris database, and certainly not the features of indexing the feature data of the multiple iris images with pupil opening degree indices as required by claim 1.

Consequently, Oda cannot teach retrieving feature data (of an iris image) by using a pupil opening degree index as required by the authentication process of claim 1.

Furthermore, the Examiner asserts at page 11, last paragraph of the outstanding Office action, that indexing data and retrieving data using keys in the index are basic operations of the database. Applicant submits that although using an index in the database is known in the art, using the pupil opening degree index to index feature data obtained from iris images (i.e., using a specific index to index specific data) as claimed is not obvious in view of the basic operations of a database. Even if the iris codes of Oda may be stored in the database in association with some unique keys and may be retrieved through the unique keys, none of the cited references discloses using “the contraction of pupil diameter” as the unique keys. The stored iris codes in the database shown in Oda cannot be retrieved by using “the contraction of pupil diameter.”

Moreover, regarding claim 1, the Examiner states that Oda at col. 9, lines 23-28, teaches the step of “generating a pupil opening degree index from the obtained pupil opening degrees and indexing the obtained feature data using the pupil opening degree index as keys for retrieving in an iris database” as claimed. By contrast, the portion in Oda indicated by the Examiner merely recites generating iris codes from the

iris images as in 15 to 17 in FIG. 1. Images 15 to 17 in FIG. 1 are iris images with different pupil size, the surface of which light from light sources is reflected on. However, the claimed features of “using pupil opening degree indices” are not taught or suggested by Oda.

Independent claim 15 recites features similar to one or more of the distinguishing features of the registration process of claim 1. Independent claim 17 recites features similar to one or more of the distinguishing features of the authentication process of claim 1.

In view of the foregoing, Applicant submits that claims 1-5, 7-8, and 15-16 define over the art cited by the Examiner.

#### **REJECTION UNDER 35 U.S.C. § 102**

Claims 11-13 and 15-17 stand rejected under 35 U.S.C. 102(e) as being anticipated by Oda (U.S. Pat. No. 6,542,624; “Oda”). This rejection is respectfully traversed.

Independent claims 11 and 17 each recite features similar to one or more of the above distinguishing features of the authentication process of claim 1.

Independent claim 15 recites features similar to one or more of the above distinguishing features of the registration process of claim 1.

Therefore, Applicant submits that the arguments presented above regarding claim 1 apply here equally.

More specifically and in addition, regarding claim 11, the Examiner states that Oda at col. 9, lines 23-28, teaches the third step as claimed. By contrast, the portion in

Oda indicated by the Examiner merely recites generating iris codes from the iris images as in 15 to 17 in FIG. 1. Images 15 to 17 in FIG. 1 are iris images with a different pupil size, the surface of which light from light sources is reflected on. However, the claimed features of “using pupil opening degree indices” are not taught or suggested by Oda.

Regarding claims 15 and 16, the Examiner states that Oda at Fig. 2, #19 “Iris Image Processing Section,” teaches “means for generating a pupil opening degree index ...” and “means for generating a key of a pupil opening index...” as claimed. However, col. 11, lines 12-17, in Oda, which shows the specific operation of “Iris Image Processing Section 19,” merely recites that the section 19 receives the image data via SSD 30, and the image processor 29 in the section 19 deciphers the order of the rearranged images and rearranges the image data to the original order for sending to the authenticity determination processor 28. Besides, col. 11, lines 18-56, in Oda, which shows the specific operation of the authenticity determination processor 28, merely recites that the processor 28 extracts biogenic response characteristics such as pupil contraction and pupil light reflection from the image data and verifies whether or not the image is for a living thing depending on the existence of these characteristics.

Thus, the claimed features of means for using the pupil opening degree indices in claims 15-16 are not taught or suggested by Oda.

Regarding claim 17, Oda at col. 3, lines 8-12, merely recites that the iris identifying system has an iris code generating device and a database for storing iris codes of individuals and identifies individuals by matching a generated iris code and a stored iris code. These are mere features of the ordinary iris identifying system. In

addition, Oda at col. 12, lines 9-20, merely recites some examples of the life check code.

Thus, the claimed features of using the pupil opening degree index in claim 17 are not taught or suggested by Oda.

In view of the foregoing, Applicant submits that claims 11-13 and 15-17 define over the art cited by the Examiner.

### **CONCLUSION**

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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By /Timothy D. MacIntyre/\_\_\_\_\_  
Timothy D. MacIntyre  
Reg. No. 42,824

HARNESS, DICKEY & PIERCE, P.L.C.  
P.O. Box 828  
Bloomfield Hills, Michigan 48303  
(248) 641-1600

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